

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of the claims in the application:

LISTING OF CLAIMS

1. (Currently Amended) A method of generating a stress pulse in a tool by means of a pressure fluid operated impact device, a rock drill or a braker, comprising: in particular, in which method

arranging the tool is arranged to be in contact with the material to be struck in order to produce an impact in the material to be processed; ~~and~~

feeding pressure fluid is fed to the impact device and ~~discharged~~ discharging the pressure fluid therefrom in order to use the impact device[[,]];

~~wherein in the impact device,~~ feeding pressure fluid is fed as pressure pulses to a working chamber residing in the impact device between a frame of the impact device and the tool such that the pressure of the pressure fluid produces a force between the frame of the impact device and the tool, the force pressing the tool towards the material to be processed such that due to the influence of the force[[,]]; and

generating a stress pulse is generated in the tool in its longitudinal direction such that the stress pulse propagates through the tool to the material to be processed, the generation of the stress pulse ending substantially at the same time as the influence of the force on the tool ends.

2. (Previously Presented) A method as claimed in claim 1, wherein the stress pulse is substantially simultaneous with and similar in length to the influence of the force on the tool.

3. (Previously Presented) A method as claimed in claim 1, wherein the force produced by the pressure pulses is transmitted to the tool by means of a separate transmission piston residing between the working chamber and the tool.

4. (Previously Presented) A method as claimed in claim 1, wherein the length of the stress pulse is adjusted by adjusting the length of the pressure pulse.

5. (Previously Presented) A method as claimed in claim 1, wherein the amplitude of the stress pulse is adjusted by adjusting the amplitude of the pressure pulse.

6. (Previously Presented) A method as claimed in claim 1, wherein the frequency of the stress pulses is adjusted by adjusting the feed frequency of the pressure pulses.

7. (Previously Presented) A method as claimed in claim 1, wherein after an impact, the tool is returned to its pre-impact position with respect to the impact device by pushing the impact device towards the tool.

8. (Previously Presented) A method as claimed in claim 1, wherein after an impact, the tool is returned to its pre-impact position with respect to the impact device by bringing a separate

force acting between the impact device and the tool to influence the tool, the force pushing the tool towards the impact device.

9. (Previously Presented) A method as claimed in claim 8, wherein the separate force acting between the impact device and the tool is produced by means of a pressure medium acting in a chamber residing between the frame of the impact device and the tool.

10. (Previously Presented) A method as claimed in claim 1, wherein in order to produce a pressure pulse, energy is charged in an energy charging space provided in the impact device and operating as an energy charging means and filled entirely with pressurized pressure fluid, the volume of the energy charging space being substantially large as compared with the volume of a pressure fluid amount to be fed in one go to the working chamber during one pressure pulse.

11. (Previously Presented) A method as claimed in claim 10, wherein when the impact device is in operation, pressure fluid is fed to the energy charging space continuously, and that pressure fluid is discharged from the energy charging space periodically alternately to the working chamber and, correspondingly, the connection from the energy charging space to the working chamber is closed and the connection from the working chamber to a pressure fluid discharge channel is opened.

12. (Previously Presented) A method as claimed in claim 1, wherein the pressure fluid feed is controlled by a control valve.

13. (Previously Presented) A method as claimed in claim 12, wherein the control valve is a rotating valve provided with a plurality of successive openings in its direction of rotation to feed pressure fluid via a plurality of feed channels to the working chamber simultaneously.

14. (Previously Presented) A method as claimed in claim 12, wherein the control valve is a rotating valve provided with a plurality of successive openings in its direction of rotation to feed pressure fluid via a plurality of feed channels to the working chamber simultaneously, and to discharge pressure fluid from the working chamber.

15. (Previously Presented) A method as claimed in claim 12, wherein the control valve is a rotating valve provided with a plurality of successive openings in its direction of rotation to feed pressure fluid via a plurality of feed channels to the working chamber simultaneously and, correspondingly, a plurality of successive openings in its direction of rotation to discharge pressure fluid from the working chamber.

16. (Currently Amended) A pressure fluid operated impact device, a rock drill or a braker ~~in particular~~, comprising:

a frame whereto a tool is mountable movably in its longitudinal direction, the tool, during an impact, being arranged to be in contact with the material to be struck[[, and]];

means for feeding pressure fluid to the impact device and discharging pressure fluid therefrom in order to use the impact device[[,]];

wherein the impact device comprises a working chamber and means for conveying pressure fluid as pressure pulses to the working chamber such that the pressure of the pressure fluid produces a force between the frame of the impact device and the tool, the force pressing the tool towards the material to be processed such that due to the influence of the force, a stress pulse is generated in the tool in its longitudinal direction such that the stress pulse propagates through the tool to the material to be processed, the generation of the stress pulse ending substantially at the same time as the influence of the force on the tool ends.

17 (Previously Presented) An impact device as claimed in claim 16, wherein the stress pulse in the tool is substantially simultaneous with and similar in length to the influence of the force on the tool.

18 (Previously Presented) An impact device as claimed in claim 16, wherein the working chamber resides between the frame of the impact device and the tool.

19. (Currently Amended) An impact device as claimed in claim 16, wherein the impact device ~~it~~ comprises a transmission piston which moves in the working chamber, the transmission piston being provided with a pressure surface which resides towards the working chamber and which the pressure of the pressure fluid influences, and that the transmission piston is directly or indirectly in contact with the tool such that when the transmission piston moves, ~~it~~ the transmission piston produces a force acting between the frame of the impact device and the tool.

20. (Previously Presented) An impact device as claimed in claim 19, wherein the transmission piston moves in the axial direction of the tool.

21. . (Previously Presented) An impact device as claimed in claim 16, wherein the means for feeding and discharging pressure fluid comprise an energy charging space which contains pressurized pressure fluid and whose volume is substantially large as compared with the volume of the working chamber.

22. (Previously Presented) An impact device as claimed in claim 21, wherein when the impact device is in operation, the means for feeding pressure fluid to the impact device and for discharging pressure fluid therefrom allow pressure fluid to flow to the energy charging space continuously, and periodically alternately open the connection from the energy charging space to the working chamber and, correspondingly, close the connection from the energy charging space to the working chamber and open the connection from the working chamber to a pressure fluid discharge channel.

23. (Previously Presented) An impact device as claimed in claim 16, wherein the means for feeding and discharging pressure fluid comprise a control valve.

24. (Previously Presented) An impact device as claimed in claim 23, wherein the control valve is arranged to control pressure fluid feed to the working chamber periodically.

25. (Previously Presented) An impact device as claimed in claim 23, wherein the control valve is arranged to control pressure fluid discharge from the working chamber periodically.

26. (Previously Presented) An impact device as claimed in claim 23, wherein the control valve is a rotating valve.

27. (Previously Presented) An impact device as claimed in claim 24, wherein the control valve is a rotating valve provided with a plurality of successive openings in its direction of rotation to feed pressure fluid therethrough to the working chamber simultaneously.

28. (Previously Presented) An impact device as claimed in claim 24, wherein the control valve is a rotating valve provided with a plurality of successive openings in its direction of rotation to feed pressure fluid therethrough to the working chamber simultaneously and, correspondingly, to discharge pressure fluid from the working chamber.

29. (Previously Presented) An impact device as claimed in claim 24, wherein the control valve is a rotating valve provided with a plurality of successive openings in its direction of rotation to feed pressure fluid therethrough to the working chamber simultaneously and, correspondingly, a plurality of successive openings in its direction of rotation to discharge pressure fluid therethrough from the working chamber simultaneously.

30. (Currently Amended) An impact device as claimed in claim 16, wherein the impact device ~~it~~ comprises means for returning a transmission piston ~~and/or~~ or a tool after an impact to its substantially pre-impact position with respect to the impact device by pushing the impact device towards the tool.

31. (Currently Amended) An impact device as claimed in claim 16, wherein the impact device ~~it~~ comprises means for returning a transmission piston ~~and/or~~ or a tool after an impact to its substantially pre-impact position with respect to the impact device by bringing a separate force acting between the impact device and the tool to influence the tool, the force pushing the tool towards the impact device.

32. (Previously Presented) An impact device as claimed in claim 16, wherein the means for producing the force acting between the separate impact device and the tool comprise a chamber residing between the impact device and the tool, wherein the force is produced by means of a pressure medium therein or to be fed thereto.